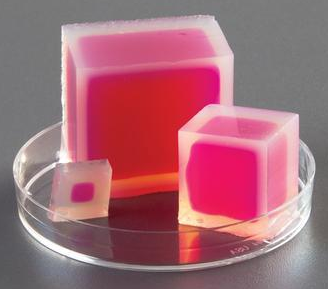
**Diffusion in Agar Cube Cells**

Mrs. Krouse, AP Biology

**Background Information:** In this lab, we will use agar cubes of different sizes to represent cells. The agars have been prepared with phenolphthalein, a chemical that turns pink in the presence of a base and clear in the presence of an acid. The cubes have been stored in a sodium hydroxide (NaOH) solution, which is a base. Therefore, they are pink. We will be placing the cubes in white vinegar, an acid. As the vinegar diffuses into the cube, it will turn the parts of the cube that it touches clear. You will be comparing the rates of diffusion for cubes of different sizes.

**Pre-Lab:**

* Use the ruler to measure the side-length of your cubes to the nearest millimeter.
* Calculate the surface area and volume of each cube.
* Determine the surface area to volume ratio of each cube. (Make sure it is reduced so that the volume is 1 cm3)
* Use your surface area to volume ratios for each cube to write a hypothesis in the space below that predicts which cube will show the highest rate of diffusion. Justify your hypothesis based on what you know about surface area to volume ratios.

**Hypothesis:**

**Lab:**

Now, design a **procedure** to test your hypothesis. Your procedure must allow you to collect numerical data. Have your procedure approved by Mrs. Krouse before you begin.

After designing your procedure, create a **data table** to collect your data and help you analyze it.

Once you have collected and analyzed your data, write a **discussion/conclusion** paragraph in which you state whether your data supports or refutes your hypothesis. Clearly and thoroughly explain HOW your data allows you to draw this conclusion.